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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/509,754

09/30/2004

Kunio Kishimoto

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EXAMINER

MCCLELLAND, KIMBERLY KEIL

ART UNIT

PAPER NUMBER

1734

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

04/27/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/509,754	<b>Applicant(s)</b> KISHIMOTO ET AL.	
	<b>Examiner</b> Kimberly K. McClelland	<b>Art Unit</b> 1734	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 March 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) 8-28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>9/30/04</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election of Group I, claims 1-7 in the reply filed on March 2<sup>nd</sup>, 2007 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
2. Claims 8-28 withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on March 2<sup>nd</sup>, 2007.

### ***Specification***

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### ***Claim Objections***

4. Claim 2 is objected to because of the following informalities: The word "pace" in line 3 should be changed to "place". Appropriate correction is required.
5. Claim 6 is objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from any other multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claim 6 not been further treated on the merits.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear if the board of claim 4 is a prepreg, or laminated to the prepreg of claim 1. Clarification is required.

8. Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The phrase, "peels off the sheet from one side of the sheet gradually and sequentially" is unclear. How is a single release sheet peeled off "gradually and sequentially". The term "gradually" is relative, and the term "sequentially" is not applicable for a single release sheet. Clarification is required.

***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1, 3, and 5 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by U.S. Patent No. 5,043,041 to Sipos et al.

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11. With respect to claim 1, Sipos et al. discloses a method of manufacturing circuit boards, including heating and pressing the prepreg at mold-releasing sheet by a heat and press means; to a given place via a removing the heat and the press applied by the heat and press means; and cooling the prepreg, then peeling off the mold-releasing sheet (column 1, lines 15-23; column 1, lines 36-40, and column 4, lines 51-56).

12. As to claim 3, Sipos et al. discloses the laminating, in which the prepreg is used to be laminated, laminates a metal foil on the prepreg, laminates a board on the prepreg, or laminates a prepreg on the prepreg (column 4, lines 43-56).

13. As to claim 5, Sipos et al. discloses the resin is kept in B-stage status (column 1, lines 8-13).

***Claim Rejections - 35 USC § 103***

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claims 2 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,672,226 to Deardorf in view of U.S. Patent No. 5,043,041 to Sipos et al.

16. With respect to claims 2, Deardorf discloses a process for forming multilayer circuit boards, including laminating a prepreg on a metal foil; heating and pressing the prepreg at a given pace for bonding the prepreg and the metal foil together; laminating a

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board having a circuit pattern on the prepreg; heating and pressing the board at a given place for bonding the prepreg and the board together; laminating another prepreg on the board; heating and pressing the another prepreg for bonding the another prepreg and the board together; laminating another metal foil on the another prepreg; heating and pressing the another metal foil at a given place for bonding the another metal foil and the another prepreg together; and heating and pressing an entire face of a unit laminated hereinbefore (See Figures 1-3, column 1, lines 40-46; column 4, lines 10-30 and lines 50-52). However, Deardorf does not specifically disclose heating and pressing the prepreg at the given place via a mold-releasing sheet by a heat and press means; removing the heat and press applied by the heat and press means; and cooling the prepreg, then peeling off the mold-releasing sheet.

17. Sipos et al. discloses a method of manufacturing circuit boards, including heating and pressing the prepreg at mold-releasing sheet by a heat and press means; to a given place via a removing the heat and the press applied by the heat and press means; and cooling the prepreg, then peeling off the mold-releasing sheet (column 1, lines 15-23; column 1, lines 36-40, and column 4, lines 51-56). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the mold release sheets taught by Sipos et al. in the laminating step of Deardorf. The motivation would have been to prevent the prepreg from sticking to the laminating means (column 1, lines 30-32).

18. In general, the transposition of process steps or the splitting of one step into two, where the processes are substantially identical or equivalent in terms of function,

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manner and result, was held to be not patentably distinguish the processes. *Ex parte Rubin*, 128 USPQ 440 (Bd. Pat. App. 1959). It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute multiple laminating steps for the single lamination step taught by Deardorf, because plural laminating steps of layers in a composite are functionally equivalent to a single laminating step of the entire composite.

19. As to claim 5, Deardorf does not specifically disclose B-Stage material.

20. Sipos et al. disclose the resin is kept in B-stage status (column 1, lines 8-13). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the B-stage materials taught by Sipos et al. in the method disclosed by Deardorf. The motivation would have been to select proper materials for manufacturing circuit boards (column 1, lines 8-13).

21. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,043,041 to Sipos et al. as applied to claims 1, 3, and 5 above, and further in view of U.S. Patent No. 6,673,190 to Haas et al.

22. With respect to claim 4, Sipos et al. discloses a method of manufacturing circuit boards, including the board having a circuit pattern is a composite of thermosetting resin and a reinforcement material (column 1, lines 8-13). However, Sipos et al. does not specifically disclose a composite of thermosetting resin and a woven or nonwoven fiber.

23. Haas et al. discloses a method of making printed wiring boards, including a composite of thermosetting resin and a nonwoven fiber (column 2, lines 55-59). It

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would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the nonwoven reinforcing material taught by Haas et al. with the reinforcing material disclosed by Sipos et al. The motivation would have been to select proper material for producing circuit boards.

24. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S.

Patent No. 5,043,041 to Sipos et al. as applied to claims 1, 3, and 5 above, and further in view of 4,994,133 to Oizumi et al.

25. With respect to claim 7, Sipos et al. does not specifically disclose the peeling off of the mold-releasing sheet peels off the sheet from one side of the sheet gradually and sequentially toward another side.

26. Oizumi et al. discloses a process for producing reinforced resin laminates, including the peeling off of the mold-releasing sheet (10) peels off the sheet from one side of the sheet gradually and sequentially toward another side (22/24; See Figure 4). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the gradual peeling step taught by Oizumi et al. in the laminating step taught by Sipos et al. The motivation would have been to allow the release sheet to be reliably peeled and stored in roll form (22; See Figure 4).

27. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S.

Patent No. 5,672,226 to Deardorf in view of U.S. Patent No. 5,043,041 to Sipos et al. as applied to claims 2 and 5 above, and further in view of 4,994,133 to Oizumi et al.



28. With respect to claim 7, Deardorf does not specifically disclose the peeling off of the mold-releasing sheet peels off the sheet from one side of the sheet gradually and sequentially toward another side.

29. Oizumi et al. discloses a process for producing reinforced resin laminates, including the peeling off of the mold-releasing sheet (10) peels off the sheet from one side of the sheet gradually and sequentially toward another side (22/24; See Figure 4). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the gradual peeling step taught by Oizumi et al. in the laminating step taught by Deardorf. The motivation would have been to allow the release sheet to be reliably peeled and stored in roll form (22; See Figure 4).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimberly K. McClelland whose telephone number is (571) 272-2372. The examiner can normally be reached on 8:00 a.m.-5 p.m. Mon-Fri..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris A. Fiorilla can be reached on (571)272-1187. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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